

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

ORDER NO. 84-10  
NPDES NO. CA0005631

WASTE DISCHARGE REQUIREMENTS FOR:

PACIFIC GAS AND ELECTRIC COMPANY  
OLEUM POWER PLANT  
RODEO, CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter Board) finds that:

General Findings

1. Pacific Gas and Electric Company, Oleum Power Plant (hereinafter discharger) was issued Regional Board Order No. 76-62, an NPDES Permit prescribing waste discharge requirements for the discharge for the Oleum steam generating electric power plant. This permit expired on May 1, 1981, but has remained in effect pursuant to Federal regulations pending the promulgation by the Federal Environment Protection Agency of effluent limitation guidelines for steam electric power plants. These guidelines were published on November 19, 1982 in the Federal Register. The Discharger filed an Application received June 24, 1981 for re-issuance of the NPDES Permit, and has subsequently amended the Application.
2. The discharger presently discharges wastes containing pollutants resulting from the generation of electric power into San Pablo Bay, a water of the United States.
3. The report of waste discharge describes the existing discharge as follows (see flow schematic in Attachment A):

<u>Discharge Outfall</u>	<u>Contributory Waste Stream</u>	<u>Annual Flow Average gpd</u>
001	A. Once-through cooling water units 1 and 2	54 million
	B. Low Volume waste Sources:	
	Intake Screen wash	162,000
	Treatment System Discharge (Total)	285,400
	(1. Air Pre-heater, Fire- side, and waterside Washes	4,400
	2. Zeolite Backwash Water	12,000
	3. Boiler Blowdown	2,000
	4. Evaporator Blowdown	58,000
	5. Auxiliary Cooling Water	65,000
	6. Sealing Well Sealing Water	144,000

4. The discharger withdraws water from the San Pablo Bay near the confluence of San Pablo Bay and Carquinez Strait in the town of Rodeo. Power generating Units 1 and 2 share a common intake structure. Cooling water passes through conventional bar racks and screens. The design approach and through-screen velocities are as follows:

<u>Velocities</u>	<u>Intake Serving Units 1 and 2</u>
Approach Screen ft/sec	0.4
cm/sec	12
Through Screen ft/sec	0.8
cm/sec	24

5. The discharger cools the condensers by pumping water from the intake to the point of discharge. The design capacity of the condensers and single speed pumps are as follows:

<u>Unit</u>	<u>Design Condenser Temp. Rise</u>	<u>Unit Pump Design Capacity (gpm Each Pump)</u>
1	15°F	20,000 gpm (2 pumps)
2	15°F	20,000 gpm (2 pumps)

6. Waste oil, water from the basement sump, storm water runoff and skimmings from the process waste clarifier are discharged to the nearby Union Oil Refinery, and are regulated under a separate Board order.
7. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on July 21, 1982. The Basin Plan contains water quality objectives for San Pablo Bay.
8. The beneficial uses of San Pablo Bay and contiguous waters are:
  - a. Recreation
  - b. Fish migration, spawning and habitat
  - c. Habitat and resting for waterfowl and migratory birds
  - d. Industrial water supply
  - e. Esthetic enjoyment
  - f. Navigation
  - g. Shellfish habitat
  - h. Estuarine uses
  - i. Preservation of Rare and Endangered Species
9. Effluent limitations establish pursuant to Section 301, 304 and 307 of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.
10. The Board finds that the Best Practicable Control Technology currently available (BPT) effluent limitations which the U.S. Environmental Protection Agency has promulgated to regulate conventional pollutants for the steam-electric power generating point source category are equivalent to Best Conventional Pollutant Control Technology (BCT) for the Oleum Power Plant of Pacific Gas and Electric Company.

11. The action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000 et seq.), in accordance with Section 13389 of the California Water Code.
12. The Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
13. The Board, in a public hearing, heard and considered all comments pertaining to the discharge permit.

#### Findings Related to Thermal Effluent Limitations

14. The CWA requires compliance with State water quality standards for the discharge of thermal effluent. The State Water Resources Control Board (State board), on 18 September 1975, amended the Water Quality Control Plan for Control of Temperature in the Coastal Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan). The Thermal Plan requires that for existing thermal waste, discharges shall comply with limitations necessary to assure protection of beneficial uses.
15. The Discharger conducted thermal effects studies (pumped entrainment mortality) as part of their cooling water intake system studies described in Finding 17. No receiving water studies were required of the discharger since discharge temperatures are considered to be relatively low and the potential impacts on aquatic resources to be minimal. Such receiving water studies conducted at Pittsburg Power Plant in the Bay-Delta estuary, which discharges much higher temperatures into a highly sensitive area, failed to demonstrate any significant adverse impact on the local or regional aquatic organisms or habitat. Therefore, the Board finds that existing thermal discharge temperatures at the Oleum Power Plant do not threaten beneficial uses in the receiving water.
16. The temperature of the discharge ranges from 47°F to 93°F with temperatures below 86°F 96% of the time.

#### Findings Related to Best Technology Available (BTA) for Intake Systems

17. Section 316(b) of the CWA requires that the location, design, construction, and capacity of cooling water intake structures reflect the BTA for minimizing adverse environmental impact. In compliance with Order No. 76-62, the Discharger submitted a final study report in May 1983 intended to comply with Section 316(b).
18. The cooling water intake is located near a transition point in the estuarine system formed by the San Francisco Bay and the delta of the Sacramento and San Joaquin River. The southeast shore of the area is marked by extensive urban industrial development, including petroleum refining. Because the aquatic environment near the power plant is estuarine, marine, freshwater and anadromous species may be present during all or part of the life cycles.

19. The current gross power output capacity of the Oleum Power Plant is as follows:

<u>Unit</u>	<u>Gross Capacity (MWE)</u>
1	45
2	50

20. The impact of the Oleum Power Plant's cooling water system is a function of the number of organisms entrained (drawn into cooling water system) and impinged (drawn into the intake screens). The 316(b) study showed that impingement losses of fish were relatively low, primarily northern anchovy and Pacific herring; both exhibiting large and highly productive populations in the Bay system. Entrainment losses were primarily larvae and juveniles of anchovy, gobi and Pacific herring. Entrainment survival is influenced by physical, thermal, and chemical stresses. Over 94 percent of the discharge temperatures recorded during the study period were lower than the lethal thermal of 30°C. Chlorination is not used for slime control nor is heat treatment for mussel control used at the Oleum Plant. The discharger's study indicated that additional losses within the cooling system were attributed to predation by biofouling organisms lining the cooling system conduits.
21. The Board finds that the best intake technology available for Units 1 and 2 is continued use of the existing system.

IT IS HEREBY ORDERED, that Pacific Gas and Electric Company, Oleum Power Plant, in order to meet the provisions of Division 7 of the California Water Code and regulations adopted thereunder, and to meet the provision of the Federal Water Pollution Control Act as amended, and regulations and guidelines adopted thereunder, shall comply with the following:

A. Prohibitions

1. The discharge of polychlorinated biphenyl compounds is prohibited.

B. Effluent Limitations

1. Discharge 001 shall not contain constituents in excess of the following limits:
- a. Chlorine residual 0.0 mg/l, instantaneous maximum
  - b. pH 6.5 - 8.5
  - c. In any representative set of samples the waste as discharged shall meet the following limit of quality:

TOXICITY: The survival of test organisms fishes in 96 hour bioassays of the effluent shall be a median of 90% survival and a 90 percentile value of not less than 70% survival.

- d. Thermal discharge limitation; Elevated temperature waste discharges shall be within limits necessary to assure protection of beneficial uses, and shall not exceed 96°F at any time.

2. Low volume waste discharges shall not exceed the following:

<u>Constituents</u>	<u>Units</u>	<u>30-Day Average</u>	<u>Maximum Daily</u>
a. Total Suspended Solids	mg/l	30	100
b. Oil and Grease	mg/l	10	20

3. The quantity of pollutants discharged from low volume wastes shall not exceed the quantity calculated from the flow of the waste sources times the concentration in mg/l in B.2. above.

C. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:
- a. Floating, suspended or deposited macroscopic particulate matter or foam;
  - b. Bottom deposits or aquatic growths;
  - c. Alteration of turbidity or apparent color beyond present natural background levels;
  - d. Visible, floating, suspended or deposited oil or other products of petroleum origin, and
  - e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl or render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.
2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State at any place within one foot of the water surface:

- a. Dissolved oxygen 7.0 mg/l minimum - median for any three consecutive months not less than 80% saturation. When natural factors cause lesser concentration than specified above, then discharge shall not cause further reduction in the concentration of dissolved oxygen.
  - b. pH Variation from natural ambient pH by more than 0.5 pH units
- 3. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or State Water Resources Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such standards.

D. Provisions

- 1. Neither the discharge nor its treatment shall create a nuisance or pollution as defined in Section 13050 of the California Water Code.
- 2. The Discharger shall comply with a Self-Monitoring Program as adopted by the Regional Board, and as may be amended by the Executive Officer.
- 3. The requirements prescribed herein do not authorize the commission of any act causing injury to property of another, nor protect the Discharger from his liabilities under federal, state or local laws, nor guarantee the discharger a capacity right in the receiving waters.
- 4. In the event of any change in control or ownership of land or waste, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be forwarded to this office.
- 5. The Discharger shall permit the Regional Board:
  - (a) Entry upon premises where an effluent source is located or in which any required records are kept;

- (b) Access at reasonable times of monitoring equipment or records; and.
  - (c) Sampling at reasonable times of any discharge.
- 6. The Discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed by the Discharger to achieve compliance with the waste discharge requirements.
- 7. After notice and opportunity for a hearing, this Order may be modified, suspended, or revoked, in whole or in part, during its term for cause including, but not limited to, the following:
  - (a) Violation of any terms or conditions of this Order;
  - (b) Obtaining this Order by misrepresentation or failure to disclose fully all relevant facts;
  - (c) A temporary or permanent reduction or elimination of the authorized discharge; or,
  - (d) A change in character, location or volume of discharge.
- 8. This permit shall be modified or alternatively revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(c), and (D), 303, 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
  - (a) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or,
  - (b) Controls any pollutant not limited in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.
- 9. All applications, reports, or information submitted to the Regional Board shall be signed and certified pursuant to Environmental Protection Agency regulations (40 CFR 122.41K).
- 10. Pursuant to Environmental Protection Agency regulations [40 CFR 122.42(a)] the Discharger must notify the Regional Board as soon as it knows or has reason to believe (1) that they have begun or expect to begin, use or manufacture of a pollutant not reported in the permit application, or (2) a discharge of a toxic pollutants not limited by this permit has occurred, or will occur, in concentrations that exceed the specified limits.
- 11. Order No. 76-62 is hereby rescinded.

12. This Order expires on March 21, 1989 and the discharger must file a Report of Waste Discharge in accordance with Title 23, California Administrative Code, not later than 180 days in advance of such date as application for issuance of new waste discharge requirements.
13. This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Water Pollution Control Act or amendments thereto, and shall take effect at the end of 10 days from date of adoption provided the Regional Administrator, Environmental Protection Agency, has no objections.

I, Roger B. James, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on March 21, 1984.

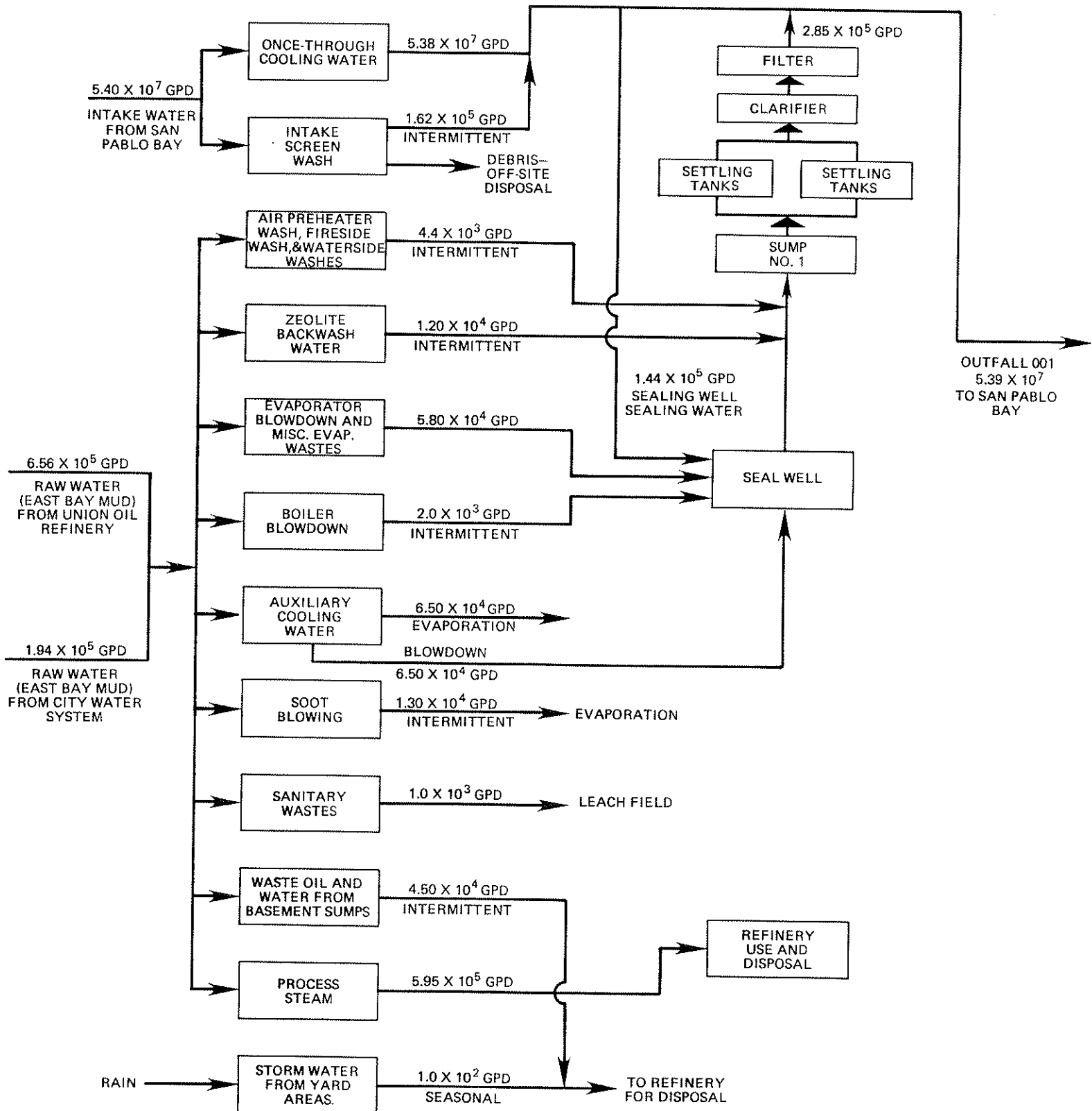
ROGER B. JAMES  
Executive Officer

Attachments:

- A - Flow Schematic
- SMP



# OLEUM POWER PLANT WATER FLOW SCHEMATIC



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

PACIFIC GAS AND ELECTRIC COMPANY  
OLEUM POWER PLANT  
RODEO, CONTRA COSTA COUNTY

PART A

A. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13268, 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16.

The principal purposes of a monitoring program by a waste discharger, also referred to as self-monitoring program, are: (1) to document compliance with waste discharge requirements and prohibitions established by this Regional Board, and (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge.

B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the latest edition of Standard Methods for the Examination of Water and Wastewater prepared and published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation, or other methods approved and specified by the Executive Officer of this Regional Board including the methods specified in attached Appendix A.

Commercial Laboratory Analyses

Water and waste analyses shall be performed by a laboratory previously approved for these analyses by the State Department of Health. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his laboratory and shall sign all reports of such work submitted to the Regional Board.

In-house Laboratory Analyses

The Board will accept analytical data from an in-house laboratory which is not currently certified if the discharger agrees in writing to: (1) perform all analyses in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants promulgated by the U.S. Environmental Protection Agency; (2) implement and maintain a satisfactory quality assurance program, (comparable to State Department of Health Services Standards); (3) demonstrate a good agreement in analytical results with those of a previously certified

laboratory in split sampling; and (4) become certified within a reasonable time if the State certification program is reinstated.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. DEFINITIONS OF TERMS

1. A grab sample is defined as an individual sample collected in fewer than 15 minutes.
2. A composite sample is a combination of individual samples obtained at equal time intervals over the specified sampling period. The volume of each individual sample is proportional to the discharge flow rate at the time of sampling.

D. SCHEDULE OF SAMPLING, ANALYSES, AND OBSERVATIONS

The discharger is required to perform observations, sampling, and analyses according to the schedule in Part B.

E. RECORDS TO MAINTAINED

1. Written reports shall be retained by the discharger(s) for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board. Such records shall show the following for each sample:
  - a. Identity of sampling and observations stations by number.
  - b. Date and time of sampling and/or observations.
  - c. Date that analyses are started and completed, and name of personnel performing the analyses.
  - d. Complete procedure used, including method of preserving sample and identity and volumes of reagents used. A reference to a specific section of Standard Methods, and EPA method, or approved alternate method from (B) above is satisfactory.
  - e. Results of analysis and/or observations.

F. REPORTS TO BE FILED WITH THE REGIONAL BOARD

1. Written self-monitoring reports shall be filed monthly (unless specified otherwise in Part B). In addition, an annual report shall be filed as indicated in F-1-f. The reports shall be comprised of the following.

a. Letter of Transmittal:

A letter transmitting self-monitoring reports should accompany each report. Such a letter shall include a discussion of requirement violations found during the past month and actions taken or planned for correcting violations, such as plant operation modifications and/or plant facilities expansion. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. Monitoring reports and the letter transmitting reports shall be signed by a principal executive officer at the level of vice-president or his duly authorized representative if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true and correct.

b. Compliance Evaluation Summary

Each report shall be accompanied by a compliance evaluation summary sheet prepared by the discharger. The report format shall be approved by the Executive Officer.

c. Map or Aerial Photograph

A map or aerial photograph shall accompany the report showing sampling and observation station locations.

d. Results of Analyses and Observations

Tabulations of the results from each required analysis or observations specified in Part B by date, time, type of sample, and station, signed by the laboratory director. The report format shall be approved by the Executive Officer.

e. List of Approved Analyses

List of analyses performed for the discharger by another approved laboratory currently or previously approved by the State Department of Health Service (and copies of reports signed by the laboratory director of that laboratory shall also be submitted as part of the report).

f. Annual Reporting

By January 31 of each year, the discharger shall submit an annual report to the Regional Board covering the previous calendar year. The report shall contain both tabular and graphic summaries of the monitoring data obtained during the previous year. In addition, the report shall contain a comprehensive discussion of the compliance record and the

corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements. The report format shall be approved by the Executive Officer and should be maintained and submitted with each regular self-monitoring report.

## PART B

### DESCRIPTION OF SAMPLING STATIONS AND SCHEDULE OF SAMPLING ANALYSIS AND OBSERVATIONS

#### I. Sampling Station Location/Description

##### A. Influent

<u>Station</u>	<u>Description</u>
I-001	At any point in the influent stream and upstream of any treatment where representative samples of the influent can be obtained.

##### B. Effluent

<u>Station</u>	<u>Description</u>
E-001-A	At any point in the outfall for Units 1 and 2 from which once through cooling water is discharged, between the point of discharge to San Pablo Bay and the point at which all pollutants tributary to that outfall are present.
E-001-B	At any point in the low volume waste stream, at at which all tributary pollutants are present, and prior to mixing with once through cooling water for Units 1 and 2.

#### II. SCHEDULE OF SAMPLING AND ANALYSIS

##### INFLUENT MONITORING

The following shall constitute the influent monitoring program:

<u>Station</u>	<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Minimum Frequency of Analysis</u>
I-001	temperature	F	-	continuous
	Tot. Sus. solids	mg/l lbs/day	Grab	monthly
	pH	-	Grab	monthly

# EFFLUENT MONITORING

The following shall constitute the effluent monitoring program:

<u>Station</u>	<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Minimum Frequency of Analysis</u>
E-001-A	temperature	F	-	continuous
	flow	MGD	from pump operating data	daily
	pH	pH units	Grab	monthly
	chlorine	mg/l	Grab	daily, when treating
E-001-B	Flow*	mgd	-	monthly
	Tot. Sus solids	mg/l	Grab	monthly
	Oil & Grease	mg/l	Grab	monthly

\*The monthly report shall include a listing of the sources of this discharge during the month, an estimate of the volume from each source, and a list of the sources being sampled.

I, Roger B. James, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 84-10.
2. Is effective on the date shown below.
3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer.

ROGER B. JAMES  
Executive Officer

March 26, 1984

Effective Date